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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,426	11/19/2003	Normand T. LeMay	1725.77US02	1096
24113 7590 11/24/2008 PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A. 4800 IDS CENTER 80 SOUTH 8TH STREET MINNEAPOLIS, MN 55402-2100				
EXAMINER				
NGUYEN, TU X				
ART UNIT		PAPER NUMBER		
2618				
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11/24/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/717,426

Applicant(s)

LEMAY, NORMAND T.

Examiner

TU X. NGUYEN

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/19/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Response to Amendment

Applicant's arguments with respect to claims 1, 13 and 20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 13-16 and 20-21, are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant admitted prior art (AAPA).

Regarding claim 1, the AAPA disclose Apparatus for reducing frequency pulling of an output VCO involving AM modulation wherein the output frequency is structured to be larger than a synthesizer VCO frequency by a factor greater than unity to maintain a non-harmonic relation between the synthesizer and the output VCO (col.1 line 64 through col.2 line 35), the apparatus comprising:

a source for signals (fig.1 element 10);

the synthesizer (fig.1, elements 12, 15a) for synthesizing said signals being in communication with a first frequency divider (fig.1, element 11);

a second frequency divider (fig.1 element 14) connected to the output VCO (fig.1, element 15a);

a third frequency divider connected to said second frequency divider and further connected to said synthesizer (fig.1, elements 11, 12, FVCO2);

a mixer (fig.1, element 16) connected to the transmission side of the output VCO and further connected to the transmission side of said second frequency divider;

a pretransmission filter connected to said mixer on the transmission side (fig.1, element 17); and

an amplifier connected to the pretransmission filter and further connected to a transmitter (fig.1, element 18);

the output frequency at said amplifier being non-harmonically related to the synthesizer VCO to thereby minimize frequency pulling during the AM modulation of the output VCO (col.1 line 64 through col.2 line 35).

Regarding claim 13, the AAPA discloses a circuit architecture for eliminating frequency pulling of a voltage controlled oscillator, said architecture comprising:

an input signal (fig.1 element 10), one voltage controlled oscillator (VCO) (fig.1, element 15a), wherein said input signal is electrically coupled to said VCO, and wherein said VCO produces a VCO output signal (fig.1 FVCO1);

wherein said mixer sums said VCO output signal with a second signal (fig.1, element 16), wherein said second signal comprises the VCO output signal multiplied by a non-unity factor, and wherein said mixer produces a circuit output signal that is an

amplified, non-unity, non-harmonic of said VCO output signal (col.1 line 64 through col.2 line 35).

Regarding claim 14, the AAPA discloses said input signal is conditioned prior to input to said VCO (fig.1, element 11).

Regarding claim 15, the AAPA discloses said input signal is conditioned through use of a frequency divider, a phase detector and a low pass filter (fig.1, elements 11, 12, 13).

Regarding claims 16 and 21, the AAPA discloses a transmitter, wherein said transmitter transmits said circuit output signal (fig.1, element 19).

Regarding claim 20, the AAPA discloses a method for reducing frequency pulling of a voltage-controlled oscillator (VCO), comprising the steps of:

generating a VCO output frequency (fig.1, element 15a); multiplying said VCO output frequency by a non-unity factor to produce a second output frequency; mixing said VCO output frequency with said second output frequency (fig.1 element 15b); and producing a frequency output comprised of the mixed signals that is an amplified (fig.1 elements 16, 18), non-unity, non-harmonic of said VCO output frequency (col.2 lines 23-24).

Allowable Subject Matter

Claims 8-12 are allowed.

Claims 2-3, objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Regarding claim 2, the AAPA fail to teach wherein said mixer is structured to accept about 100% of the frequency from the output VCO and further accept a frequency input equal to about 50% of the output VCO.

Regarding claim 3, the AAPA fail to teach said third frequency divider is structured to distribute 1x50% of the frequency from the output VCO to the phase detector.

Regarding independent claim 8, the AAPA fails to teach introducing $\frac{1}{2}$ of said VCO output into said synthesizer via one of said plurality of frequency dividers; and producing a frequency output equal to 1.5 times greater than said VCO output frequency at an output amplifier.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Nguyen whose telephone number is 571-272-7883.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tu X Nguyen/

Examiner, Art Unit 2618

11/07/08